UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF

February 14, 1994

Mr. Alan Bielawski
Sidley & Austin
One First National Plaza
Chicago, IL 60603

Re: Acceptance of RI Report, Disapproval of FS Report

Dear Mr. Bielawski:

Attached are U.S. EPA's (EPA) and Illinois EPA's comments to the disapproved Lenz Oil Feasibility Study (FS). This letter also conveys a number of other EPA actions and concerns:

1. EPA is transmitting the final risk assessment for incorporation into the RI. Settling Defendant's comments have been incorporated into the final risk assessment.

2. With the final risk assessment incorporated, EPA and IEPA accept the RI report. The RI report is accepted as a summary of data collected at the Lenz Oil site. Acceptance does not imply that EPA feels the RI tasks are complete. Indeed, treatability studies are an RI task. EPA does not share Settling Defendants view that this task is unnecessary.

3. These comments incorporate salient ARARs issues to the extent that they have been adequately identified in the FS. The lack of detail in this document, challenges EPA's ability to call this document a "draft".

In light of EPA's FS concerns, I think it would be prudent to meet in the next week to discuss some of the logic behind the FS alternatives. This would be strictly a "big picture" discussion so that we agree on the direction of the project. As such, only the ERM project manager and yourself are key players. Attendance by extraneous individuals is a distraction and generally introduces an unnecessary level of minutia into the discussion. I have always found operating under a "no surprises" philosophy enhances working relationships and keeps site progress as the forefront objective.

Please contact me at 312/886-0622 if you are interested in meeting. However, such a meeting is not an opportunity to delay the schedule. The schedule in the AOC and SOW still holds regardless of a meeting.

Sincerely,

Cindy J. Nolan,
Remedial Project Manager

cc: Charlie Brasher, USEPA
Tracey Fitzgerald, IEPA
Jerry Wolman, IEPA
Stu Hersh, USEPA
Jeff Cox, USEPA
John Imse, ERM

Detailed comments attached generally embellish upon four significant flaws in the Feasibility Study (FS). These are noted below.

1. An FS is not a conceptual document, it is an engineering document. The Lenz Oil FS fails to serve as an engineering document. There are no calculations to support any feasibility or cost estimate. Ground water pumping, draw-down, soil and NAPL volume estimates are not justified. Even the diagrams are not useful in this regard. There is also no discussion of discharge concentration (i.e. wastewater, air, etc.) or monitoring parameters and frequency. In short, there is no detail in the detailed analysis, nor is there a comparative analysis. Accepting a FS is not an act of faith on the Agency's part. It must be defensible and logical.

2. All innovative treatment technologies are eliminated. This is surprising for an LNAPL which is only a few feet below the surface. All LNAPL sites in the region are either conducting treatability studies and/or relying upon information from analogous scenarios to develop alternatives. This FS seems to take the approach that instead of evaluating multiple treatment techniques <u>in series</u>, the multiple waste type is reason enough to eliminate each technology when evaluated alone.

3. The ARARs discussion is at best, inadequate; and is some cases, it's wrong. The fact that the soil is RCRA listed waste and the LNAPL is listed and characteristic waste is not adequately addressed from a residuals management standpoint. Any additional cost for residuals management is not addressed. The alternatives do not appear to comply with RCRA now under the Corrective Action Management Unit (CAMU) concept or pre-CAMU with LDRs. In addition, the area seems to a wetland and a floodplain, yet no delineation is provided. More importantly, one sentence mentions that if a remedy impacts the wetlands, some compensation may be required or the ARAR waived. There is no discussion about how compliance might be achieved, and the possible costs. There is casual mention about some State ARAR waivers which <u>might</u> be needed. ARARs compliance is not a casual issue, nor are these issues unique to this site. In deed, this is a well tread path. The FS approach pleads ignorance. This either reflects a lack of knowledge (and therefore a lack of adequate qualification) or manipulative behavior.

4. All alternatives strive to constrict construction to the property boundary. This leads to alternatives which do not comply with ARARs, are illogical from an implementation standpoint and in some cases, actually exacerbate the contamination (Alternative 4 in particular). Thus, the alternatives do not comply with the NCP.

Additional Comments

Section 1 Comments - In general, Section 1 fails to provide a concise summary of site conditions and characteristics needed to set the stage for identification and screening of alternatives. As the section is written now, it discusses the site without concluding anything about it. The following changes are needed to make this section useful.

1. Section 1 must include a table summarizing soil, geologic and hydrogeologic characteristics for each horizon including: horizontal and vertical hydraulic gradients, conductivities, soil permeability, porosity, TOC, sieve analysis, grain size distribution, % sand, silt and clay, soil pH and other data which may have been collected during the RI. This table is needed since there is nothing concise about such data as it is presented in the RI. From an engineering perspective, data are more useful when presented in terms of ranges, not averages.

2. Section 1.2 discusses designated wetland and 100 year floodplain areas. Figures delineating these areas must be included.

3. The site history in Section 1.3 must succinctly include a discussion of the nature of operations at the site, its regulatory status, and waste types accepted according to RCRA codes. Table 1-3 from the RI must be included in the site history section of the FS with reference to where the information comes from. Vague references what "may" be listed and/or characteristic regarding this waste are unacceptable. Establishing the nature of the RCRA listed materials defines specifically how RCRA applies to the alternatives. Failure to have clarified this in previous documents submitted by the settling defendants is a gross oversight which has effected cost and development of alternatives.

4. The discussion of the NAPL in Section 1.4.4 needs further discussion of nature and extent. Specifically, Table 1-3 must contain the RCRA characteristic levels and the text must clarify which constituents the waste is likely to be characteristic for and why. In addition, there are implications that such waste is likely characteristic for some VOCs, had the analysis been valid. This is a valid presumption and more cost conservative. It must be presented as such. During RD, this presumption can be confirmed and any changes made accordingly. The implications of such changes must be discussed in detailed analysis. Clear up the vague discussions of the NAPL characteristics in other sections of the FS as appropriate. Further, the NAPL volume estimates and assumptions must be clear, specific and based on knowledge of soil characteristics, such as porosity, or other "controlling" factors. Volume estimates for treatment later in the text are misleading in their lack of clarity (specifically, a comparison of p2-9 with p4-12).

5. Section 1.4.5 ground water discussion and associated figures (generally contained in Section 2) are misleading regarding the extent of the plume. Contrary to the confusing first sentence in the second paragraph on p. 1-14, the fact is, contaminants extend beyond the monitoring well network present. Rephrase the sentence. Therefore, two points must be incorporated into the discussion and the alternatives. First, there must be a demonstration that based on existing ground water concentrations, ARARs and WQC are not likely to be exceeded at the present time in the Des Plaines River (unless there are data to show this). The dashed lines on figure 2-3 imply that we believe the plume has not yet reached the river. In fact, it has, but it is diluted by the river. Change the figure to reflect the fact that the plume does discharge to the river as ground water gradients demonstrate. Second, the extent of contamination east and west of the site must be further defined during RD. Make that point in text for detailed analysis. It is likely that ground water collection will be needed in those areas, unless somehow the downgradient collection system is designed (or extended) to collect that ground water.

6. Section 1.6 must be modified in accordance with the revised risk assessment.

7. The Section 1 tables 1-1 to 1-4 are not useful data summaries. Tables with ranges and averages better summarize the site and are needed for the ROD. The RI doesn't seem to have such summary tables either. If the risk assessment has them, use them. Otherwise, create them in lieu of the existing tables.

Section 2 comments

8. Section 2, p.2-5. Delete sentence at end of first paragraph: "If neither an MCL or a nonzero MCLG is available for a particular contaminant, remediation goals would be based on background surface water and/or ground water concentrations." This doesn't not come from the NCP and is misleading in the context of the rest of the paragraph. Remediation goals are a site-specific Agency determination. Using MCLs, MCLs, background and/or cleanup goals from the risk assessment are all options.

9. Section 2.2.2 will need to incorporate the final risk assessment.

10. The second paragraph on p.2-9 is not clear with regard to volume estimates. First, ground water volume estimates are misleading since the volume to be treated depends on how long it takes to achieve clean up levels. Partitioning and restoration timeframe will be different for different alternatives. Therefore, the volume estimate is meaningless in this context. Second, the NAPL estimate must contain supporting justification (see comment 3 above). If 91,000 square feet is a legitimate

estimate, how does the sum of soil hot spot and NAPL area equal the 7,800 cubic yards estimated on p. 4-12? Explain, justify and include all supporting calculations for volume estimates.

11. p.2-13 discusses the role of barriers, specifically, slurry walls to create gradient reversals and reduce the amount of ground water to be treated. It appears that the slurry wall is intended to contain the LNAPL. In that context, "keying" to an underlying strata is not the driving force in determining the necessary depth of the wall. But, it is unclear how the objective to prevent downward migration is met with the proposed wall depth.

12. p.2-15 discusses solidification/stabilization technologies and dismisses them without sufficient justification. It is unclear which contaminants, or class of contaminants present in which areas (soil hot spots or NAPL) preclude further evaluation of this technology. Vague reference to "organics" is overly broad. Reference to PCBs is also unclear. If PCBs are significant enough, then the PCB cleanup policy should be a TBC discussed in the ARARs section. TSCA would need to be addressed as well. If PCBs are not present in significant enough concentrations to trigger action (when picked up) under these ARARs, then what is it about their presence which eliminates this technology? Furthermore, if the free phase NAPL were removed first, would such technologies be more viable? Could solidification/stabilization be used in combination with other technologies such as soil flushing (to remove NAPL)? Also, it is more likely that these technologies limit the solubility and mobility of contaminants, not the toxicity as suggested in the text.

13. Vitrification, chemical and soil flushing, biological treatment, and bioremediation are eliminated prematurely and without adequate justification. These are eliminated without treatability studies. Many, if not most, of the recovery enhancement technologies are derived from the oil industry. It is really surprising to find so little thought given to such other alternatives as steam injection and surfactant/polymer use (with drive water). It may seem cost convenient to postpone treatability studies until design, but not when compared to the cost of penalties for not having completed the RI tasks.

14. Why aren't low temperature thermal treatment technologies an option? What would preclude their use? Detailed analysis should discuss the similarities and differences in high vs. low temperature thermal treatment processes, and what cost, implementability, etc. considerations would be of particular concern during RD/RA (i.e. low temp. extraction processes would generate a waste for off-site disposal, but sometimes do not concentrate the residuals).

15. The discussion of residuals generated as a result of handling RCRA waste in the first paragraph of p.2-18 fails to explain with specificity the implementation requirements for compliance with RCRA ARARs. At the time this FS was drafted, the applicable RCRA requirements concerning placement, LDRs, MTRs and soil and debris treatment standards were triggered (see the Superfund LDR guides 9347.3-01FS to 9347.3-06FS). As a result, costs may be (significantly) underestimated.

However, a new RCRA rule has been promulgated which may ease RCRA compliance issues. The new RCRA CAMU rule is intended, in part, to alleviate costly residuals management, in that waste residues will not trigger placement, thus, other provisions of RCRA are not automatically triggered. However, use of CAMU is not a "given" and, in deed, in some circumstances, is not needed. If Settling Defendants intend to use this rule, note that the FS must contain information required to support a CAMU designation and to assess the decision criteria specified in Section 264.552. For those states which are authorized for HSWA, but have not adopted the new CAMU, a waiver of existing state HSWA regulations will likely be required. Illinois is working to incorporate CAMU, but as of this writing its status is unknown.

Pre- or post-CAMU regulation, the waste remains RCRA regulated after treatment unless it is delisted. FS considerations which must be incorporated into the text for delisting of waste are discussed in "A Guide to Delisting of RCRA Wastes for Superfund Remedial Responses" 9347.3-09FS.

16. Explain in detail, how disposal of collected NAPL (a listed waste) via recycling and fuel blending as discussed on page 2-23 complies with RCRA.

17. It is unclear whether or not enhanced NAPL extraction techniques discussed on p2-27 are retained. EPA expects they will be.

18. Comments on Chapter 2 tables:

a. Table 2-1 the Barium MCL is incorrect.
b. Table 2-3 needs to list the ARARs for recycling and fuel blending.
c. Table 2-4 will be substituted with the remedial action objectives provided by EPA.
d. Table 2-5 must match the risk assessment.
e. Table 2-7 is not useful since it does not distinguish ash, hot spots and the rest of the site for soil. Make it match the risk assessment or delete the table.
f. A table needs to be added to Chapter 2 which summarizes the screening process. This table must model Figure 4-4 of the RI/FS guidance and show which technologies and process options were eliminated with the screening comments. Such a

table will be used in the ROD in lieu of a lengthy screening discussion.
g. Table 2-9. Replace the term "bioreclamation" since reclamation is not really contemplated. Also, as clarification, the vertical barriers are actually intended to work only with ground water treatment and as such function as hydraulic barriers.

19. Comments on Chapter 2 figures:

a. The ground water plume on the east side of the site near G104L is undefined and dashed lines should reflect that. During design, any easterly extent must be confirmed in order to ensure that the ground water capture scheme includes that area.
b. The figure implies that contaminated ground water has not yet reached the river. That is incorrect. Open the dashed lines at the river.
c. Figures 2-3 and 2-4 need to be all inclusive with the wells. Include G105L, G106D and G102D. In addition, the figures must define the terms shallow and deep. It is not intuitively obvious from the well markings or the RI report.

Section 3 Comments. Instead of repeating comments for chapters 3 and 4, most have been incorporated into chapter 4.

20. The second paragraph of p3-1 indicates that only remedial alternatives selected for further analysis are presented in Section 3. Two points become obvious: first, this implies that information on other alternatives was considered, but omitted. This is curious since an obvious alternative scenario - that is, incineration, soil cap, NAPL collection and ground water pump and treat seems not to have been considered. The lower soil volume for hot spots only (no NAPL) may make off-site incineration cost effective. Given how long term the ground water pump and treat scenario is for all existing alternatives, this type of alternative is no less viable. Second, since there is no <u>real</u> alternative screening, Chapters 3 and 4 could have been combined. This would have improve how the document reads because it prevents flipping back and forth for the meager amount of additional information provided by chapter 4. This is primarily an editorial comment since as EPA has noted, all alternatives have some significant conceptual problems.

21. Ground water and NAPL monitoring discussed on p3-5 require at least 30 monitoring wells, yet there is no figure which includes the conceptual locations for those wells. This must be included.

Section 4 Comments.

22. Ground water estimates for pump and treat are inadequately

justified. A model estimate is given on p4-9, but what model was used? What were the assumptions? What is the draw-down? The FS must include all engineering support documentation. What relationship do those estimates have to the vague and unsupported ground water volume requiring remediation estimate given on p2-9?

23. Alternative 2 discussions of ground water treatment from pages pgs. 4-8 through 4-11. This raises two points: First, institutional controls are not engineering components of the alternative and this discussion needs its own section. Otherwise, its too buried for the public to realize its role. Second, there are a number of policies and ARARs regarding process vent emissions which need to be addressed. Items to be assessed and for which standards must be identified include: RCRA process vents regulations, cumulative risk from emissions, and whether this is an ozone attainment area. While this point is not intrinsically related to ground water, the FS must evaluate whether carbon adsorption is needed for air stripping (or for any process vent) as a result of these concerns.

In addition, Section 4.3.4.5 mentions short-term risk to the community due to the excavation of soils. Elaborate on this issue pursuant to EPA document 450\1-89-002, "Estimation of Baseline Air Emission at Superfund Sites". This is both a safety issue and a community concern.

24. The FS must include all the delisting assessment information required in the delisting fact sheet referenced previously.

25. Has the POTW been contacted to determine whether or not they will accept the waste? The cost difference and public acceptability issues dictate that this be known before the FS is final. However, the FS should continue to evaluate both options.

26. The incineration portion includes the NAPL. Why re-incinerate the existing ash? How will the NAPL be defined in the field? What pre-design work is needed to refine the volume estimate? The existing volume estimates are vague and unsupported. Submit the supporting documentation. Which volume estimates are valid, those on p4-12 or those on p2-9?

27. Alternative 2 highlights the problem with a lack of wetland/floodplain delineation. It does not comply with ARARs as discussed in p4-14 because there is insufficient justification given for an ARAR waiver and there is also no alternative or discussion about what would be needed for ARAR compliance. How can an informed decision regarding a waiver be made in the ROD if no evaluation of compliance is provided? The public comment period for the RI/FS and Proposed Plan also serve in fulfillment of public notice and comment when waivers contained within specific regulations are triggered. Therefore, if a waiver is used, its justification must be highlighted in the FS.

28. The long-term effectiveness and permanence discussion on p4-14 refers to 80 to 90 percent reduction of hot spots. What is missing and why? The hot spots will be defined by cleanup level. What would make it unachievable?

29. Define the RCRA cap layers in greater detail for alternative 3. What is the 1 foot protective layer made of? According to p3-7, the frost line is 4 - 6 feet below grade in this area. Yet, the clay layer has only 3 feet above it. What will protect the cap from freeze/thaw effects? Is Subtitle C triggered for closure or reduction in infiltration?

30. P4-18 discusses a conventional free-phase NAPL removal system. Yet on figure 4-4 and in chapter 2, the technical acceptability of an enhanced system is discussed. Which is it? This alternative should present a process flow diagram for an enhanced system (note previous discussion about removal enhancement).

31. Explain how fuel blending or recycling of free-phase NAPL complies with RCRA (noted previously).

32. All previous comments concerning supporting documentation apply to Alternative 3. All previous comments concerning ground water apply. All previous comments regarding lack of ARARs compliance also apply. In addition, Alternative 3 seems illogical; a RCRA cap, A NAPL collection system which must essentially pull the NAPL back on-site for collection. The desire to stay on-property is hardly justified.

33. Alternative 4 has an even greater logic disconnect. A slurry wall bifurcated NAPL without off-boundary containment. What makes this alternative conceptually logical, or technically viable given the likely lack of NAPL compatibility with slurry walls? Since the NAPL outside the slurry wall is allowed to spread (until it hits the extraction wells), it further contaminates soil and is therefore, not compliant with the NCP. If a slurry wall were considered, it should logically, encompass the NAPL. In addition, what are the implications for ground water goals (ROD standards) interior and exterior to the slurry wall(as the alternative is currently configured)? Are they the same?

34. Comments on Chapter 4 Figures:

a. Show the expected draw-down of the ground water monitoring wells, the 30 additional wells needed for monitoring and any other engineering detail in figure 4-1.
b. Figure 4-3 does not indicate the NAPL as a hot spot. Be consistent. If NAPL is considered a hot spot for incineration, as per discussion, reflect that in this figure. Indicate location for incinerator and all support

systems.
c. All figures must define the remedy components, since it is not intuitively obvious looking at the figure.
d. The NAPL mysteriously disappeared from figure 4-5?

35. The role of risk in the FS should be to look at short-term implementation risks and residual risk (risk remaining after implementation of the alternative), pursuant to RAGS. This has been noted in previous comments. Appendix A must be modified accordingly.

36. Appendix B is the CORA model. Note that the CORA model documentation states: "it is not designed to be as accurate as an FS-level cost estimate". Improved engineering detail and ARAR compliance should significantly improve the cost estimates provided. It's lack of sensitivity may underestimate costs. In addition, I have been told that these costs have not been updated by EPA in 2 - 3 years - little comfort to those parties seeking an early settlement.

37. Community and State Acceptance. The FS generally reserves comment on these potential concerns in favor of the ROD responsiveness summary. This is a common approach, but not particularly helpful for the community. It is fairer to highlight for the community what they can expect to see at the site short/long term in a few sentences. This is especially true for this FS since the figures for the alternatives do not show detail (or even state the remedy alternative in the figure title!). Those who live next to the site may be concerned that a POTW may be built next door, for example. Fine points are easy to miss in a document which does not explain much. People need to understand what they are getting.